Claim 33 stand rejected under 35 U.S.C. § 112, paragraph 1, on the basis that a skilled practitioner would not know how to use the invention, as the claim is said not to be supported by a "specific asserted utility or a well-established utility." Claims 34 and 37 stand rejected under 35 U.S.C. § 112, paragraph 2, as they are said to fail to particularly point out and distinctly claim the invention.

Claims 19-37 stand rejected under 35 U.S.C. § 112, paragraph 1, because the specification is said not to provide enablement for select moieties of R^3 and of R^4 and R^5 in combination with the nitrogen to which they are bound to form a nitrogen-containing heterocycle.

There are no rejections over prior art.

Prior Election Requirement and New Restriction Requirement

In view of applicants' election of the species of Example 22 and argument entered in traverse of the restriction requirement entered in paper No. 7, the Examiner now has entered yet another artificial and contrived restriction requirement. Applicants respectfully traverse the requirement for a plurality of reasons.

The compound of Example 22 does not read on the newly-formed Genus I. An application should be limited to a single invention, *In re Harnisch*, 206 U.S.P.Q. 300, 305 (C.C.P.A. 1980). It is clear that claims 19-37 embrace but a single inventive concept.

The compound of Example 22 is not a member of the genus to which the Examiner seeks to limit prosecution. The compound of Example 22 requires, *inter alia*, that R' be a $-CH_3$ moiety and R^{20} and R^{21} are H. Thus, the compound of Example 22 cannot be a member of a genus in which "$R' = R^{20} = R^{21}$."

The moieties appended to the core structure are claimed in Markush style. The members of the Markush groups are related, and each compound formed is a retroviral protease inhibitor. Use of Markush groups under this circumstance is not a basis for restricting the application to less than the entirety of the group. In particular, in *Ex parte Clark*, 11 U.S.P.Q. 52 (Comm. Pat. 1931), a Markush group including aliphatic, aromatic, and aralkyl compounds was found not objectionable. Similarly, in *Ex parte Dahlen*, 42 U.S.P.Q. 208 (Bd. App. 1938), the Board found acceptable claims directed to compounds having a common core and side chains that varied greatly. The latter case was described in *Harnisch, id.*, as having "a community of properties justifying their grouping."

Both *Clark* and *Dahlen* are relevant to this application. The effectiveness of the claimed compounds as retroviral protease inhibitor is explicitly identified in the specification, and the effectiveness of analogous compounds is exemplified. The claimed compounds are like those in *Dahlen*, having various side-chain moieties on a common core, and those in *Clark*, wherein the side chains include aliphatic, aromatic, and aralkyl moieties. Therefore, it is reasonable to treat claims 19-37 as encompassing but a single invention.

To the extent the restriction requirement purports to restrict claims 19-37 in any way, Applicants respectfully traverse the requirement. Claims 19-37, which read on the species of Example 22 and its use, embrace but a single inventive concept.

Applicants further submit that the creation of a genus narrower than the scope of claims 19-37 is both improperly arbitrary and contrary to United States Rules of Practice. Applicants' identification of claims that read on the elected species provides the claims that should be examined. These are the claims that are 'generic' to the elected species. Any claim that does not

read on the elected species isn't generic to the elected species, and clearly does not belong in a genus based on the elected species. Conversely, each claim that reads on the species should be examined in its entirety.

Thus, Applicants respectfully traverse the restriction requirement of this Office Action.

Formal Rejections

Because each of the rejections goes only to part of the claims, each of the following remarks go to that part directed to the elected species and claims that are generic thereto.

Claim 33 stands rejected under 35 U.S.C. § 112, first paragraph, as not supported by a utility, and thus is said not to teach a skilled practitioner how to use the invention. Applicants respectfully traverse this rejection. "[I]nhibiting a retroviral protease" is a specific utility.

Applicants respectfully submit that the statement "inhibition of retroviral protease is a mechanism" is not relevant, because inhibition of a retroviral protease is a utility unto itself. As set forth throughout the specification, inhibition of retroviral protease inhibits viral replication, and thus ameliorates retroviral infections. Thus, the utility is clear and is described in the specification.

Further, it is well known to skilled practitioners that inhibition of retroviral protease is effective in treating a number of diseases, including HIV and other lentiviruses such as HIV-2, respiratory syncitial virus, hepadnavirus, picornavirus, and cytomegalovirus. Treatment of such diseases, and others, by inhibiting retroviral protease is disclosed in US Patent No. 5,756,533, which is incorporated by reference into the application. Thus, the skilled practitioner has been informed about how to use the claimed invention, and Applicants respectfully submit that the

utility is described in the specification in a manner that instructs a skilled practitioner how to use the claimed invention of claim 33.

The citation in the Office Action of *In re Fouche* and *In re Wands* is unavailing. Applicants note that *Fouche* teaches that one need not have examples to enable a skilled practitioner to use the invention, and that not all of the claimed compounds must have the same degree of therapeutic effectiveness. *In re Fouche*, 169 U.S.P.Q. 429, 434 (C.C.P.A. 1971).

Regarding *Wands*, Applicants respectfully submit that the application fully provides the information required to inform a skilled practitioner how to use the invention. In particular, the application fully satisfies the *Wands* factors cited by the Examiner. Applicants respectfully submit that the predictability of inhibiting retroviral protease, which is what is claimed, is well established in the specification; compounds analogous to those of claim 33 are illustrated by both enzyme and CEM cell assays to inhibit retroviral protease. (The tested compounds are analogous to the claimed compounds because, whereas R^2 of the tested compounds does not include a sulfur moiety, the claimed compounds require that R^2 include sulfur.) The enzyme and CEM cell assays show the effectiveness of the analogous compounds. Dosage and other treatment information are set forth at pages 163-169. The specification describes that inhibition of retroviral protease yields amelioration of diseases caused by retrovirus.

Applicants respectfully submit the effectiveness of compounds of the claims is reasonably supported by the illustrated effective inhibition of retroviral protease by analogous compounds in the Examples. In this regard, Applicants respectfully submit that identification of specific diseases treated, to which the Examiner has directed the argument relating to the *Wands* factors, is not a relevant enquiry. Rather, using the numbering system used by the Examiner, the

relevant enquiry is whether the specification (1) teaches that inhibition of retroviral protease is reasonably expected with the claimed compounds (5th *Wands* factor); (2) teaches a skilled practitioner how to use the compounds for the specific utility disclosed in the specification (6th *Wands* factor); (3) provides examples (7th *Wands* factor); and (4) the amount of experimentation necessary (8th *Wands* factor). By these standards, and the other four *Wands* factors, which have not been characterized as deficient in the application, the claim is in condition for allowance. Applicants respectfully traverse this rejection.

Claim 34 stands rejected under 35 U.S.C. § 112, second paragraph, because the phrase "a retroviral infection" is said to be indefinite because the phrase is 'so broad.' Applicants respectfully traverse this rejection. As described above, retroviral infections are well known to skilled practitioners. Further, retroviral infections that can be treated in accordance with the invention are identified in the specification, and others are identified in a United States Patent incorporated in its entirety by reference. Applicants respectfully submit that the identities of specific infections need not be recited in the claim; the claim is sufficiently limited by use of 'retroviral protease.' The phrase is not made indefinite because a particular disease, such as AIDS, is not recited in the claim. Indeed, the identity of the retrovirus is of no import. Applicants respectfully submit that the claim is in condition for allowance.

In claim 37, the phrase "in combination with other drugs" is said to make the claim indefinite under 35 U.S.C. § 112, second paragraph. Applicants respectfully traverse this rejection, as the drugs in question are well defined. The entirety of the relevant phrase is set forth in the claims as "drugs for the treatment of AIDS or the symptoms of AIDS." Such drugs are described and exemplified in the specification at page 167, line 10 to page 168, line 10 of the

application. Not all drugs are suitably combined with a compound of the invention in accordance with this claim. Rather, drugs relating to "treatment of AIDS or the symptoms of AIDS" are required.

Applicants respectfully submit that claims 30, 34, and 37 are in condition for allowance over these rejections.

Claims 19-37 stand rejected under 35 U.S.C. § 112, first paragraph. The rejection is based on the allegation that the specification does not provide enablement for specified R^3 and R^4/R^5 moieties. Applicants respectfully traverse this rejection for essentially the same reasons expressed above for the rejections under 35 U.S.C. § 112, first paragraph.

It is appropriate to clarify that R^3 does not appear in the formula of the claimed compound. Rather, R' is selected from the same moieties from which R^3 is selected. Apparently, this is the intended basis for the rejection.

When characterizing the claimed invention in terms of the 8 *Wands* factors, one must not confuse the level of predictability in the art with the number of exemplifications of the claimed invention. Whether one or one hundred compounds were tested is irrelevant to the level of predictability *in the art*. Thus, a low number of exemplifications does not require a finding against patentability.

That compounds analogous to the claimed compounds and containing a sole nitrogen-containing R^4R^5 moiety as right-end terminus associated with a common core and divers left-end termini were tested similarly is not a sound basis for rejecting these claims. It is well settled that an inventor need not provide working examples. Herein, the application contains examples and

sets forth methods for making and using various compounds of the invention in detail sufficient for a skilled practitioner to make and use the invention.

Regarding another of the factors, it will not be necessary to engage in undue experimentation to make and use the invention. Methods of making divers compounds of the invention are set forth in terms that enable a skilled practitioner to make any claimed compound. Further, the manner of use also is disclosed in the specification in a manner that will enable a skilled practitioner to use the invention without undue experimentation.

Thus, the key to a rejection regarding enablement is whether *undue* experimentation is required. In the claimed invention, the compounds inhibit retroviral protease. Because the compounds necessarily do not have identical potency (*Fouche*, 169 U.S.P.Q. at 434), it likely will be necessary to adjust dosage. However, such dosage adjustments are not considered *undue* experimentation. *US v. Telectronics*, 8 U.S.P.Q. 2d 1217 (Fed. Cir. 1988), *cert. denied*, 490 U.S. 1046 (1989). Rather, dose/response studies are within the skill of a practitioner, and do not constitute undue experimentation. *Telectronics*, 8 U.S.P.Q. 2d at 1224.

Based on the teachings in the specification, a skilled practitioner would know how to use the invention and how to determine an appropriate dose. "Section 112, ¶ 2, requires only reasonable precision" in setting boundaries of the claimed invention. *Id.* at 1223. Herein, the specification reasonably apprises a skilled practitioner how to use the invention and is sufficiently precise.

Even though the claims encompass plural moieties, the claims here are in condition for allowance. The specification enables the skilled practitioner to practice the invention as broadly as it is claimed (*In re Bowen*, 181 U.S.P.Q. 48, 51 (C.C.P.A. 1974)). The number of examples

makes no difference, and dose/response determinations are not considered undue experimentation.

CONCLUSION

Applicants elected the species of Example 22 for examination, and identified claims 19-37 as reading on the compound of Example 22 and its use. The Examiner now seeks to restrict these claims. However, because the subject matter embraced by claims 19-37 is a single inventive concept, Applicants respectfully traverse the restriction.

Applicants respectfully traverse the formal rejections, as the invention is described in such terms as to enable a skilled practitioner to make and use the invention, and the application particularly points out and distinctly claims the subject matter Applicants regard as the invention.

There being no rejections over prior art, Applicants respectfully submit that claims 19-37 are in condition for allowance and earnestly solicit favorable action thereon.

Respectfully submitted,

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